



Roswell Independent School District  
Oct 2009

# Steering Committee Workshop #1 Elementary Schools

*Credit: graphics by Cuningham Group*

# Schedule

## Overview

- Steering Committee Mtg #1 Elem
- Staff Interviews
- Steering Committee Mtg #2 Elem
- Sub-Committee Activities
- Tours of Peer Schools
- Charrette-Mtg #3 Elem/Mid

10/7

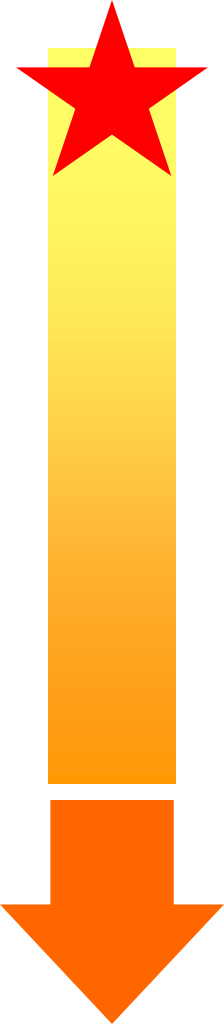
10/20-21

11/10

TBD

TBD

TBD

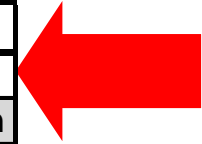


# Overall Schedule

Planning Team

## RISD Schedule for Educational Specifications Planning

Meeting/Task	Date	Time
Existing Facility Tours (all interested)*	10/6/2009	2 pm - 4 pm
Steering Committee Mtg #1 Elementary	10/7/2009	8 am - 12 noon
Interviews/ District Staff	10/20/2009	8 am - 5 pm
Interviews/ Teaching Staff	10/21/2009	8 am - 3 pm
Steering Committee Mtg #2 Elementary	11/10/2009	8 am - 3 pm
Analysis/ Internal Coordination		
Charette Elementary	Dec (TBD)	TBD
Analysis/ Internal Coordination		
Board of Education Presentation	TBD	TBD



 = Steering Committee Meeting

\*information to be distributed

# Agenda

Tues Oct 7

8:00 – 8:30 AM Informal Greeting/ Coffee and Pastries

8:30 – 9:00 AM Description of the Process and Timeline

9:00 – 9:30 AM Review of Elementary School Facility Trends

9:30 – 10:30 AM Group Discussion and Exercise (Learning Process)

10:30 – 10:45 AM BREAK (voting)

10:45 – 11:45 AM Discussion and Exercise (Learning Context)

11:45 – 12:00 noon Plans for Next Meeting and Wrap Up

MEETING CLOSING (voting)

Roswell Independent School District  
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# Envisioning the 21<sup>st</sup> Century Elementary School

(Teaching & Learning Trends and Environment)

Molly Smith, AICP, REFP

*Credit: graphics by Cunningham Group*



# DEVELOPING TRENDS

- AGE APPROPRIATE SETTINGS –  
BRAIN DEVELOPMENT NEEDS
- ENGAGEMENT
- PERSONALIZATION
- CONNECTIVITY
- AUTHENTICITY



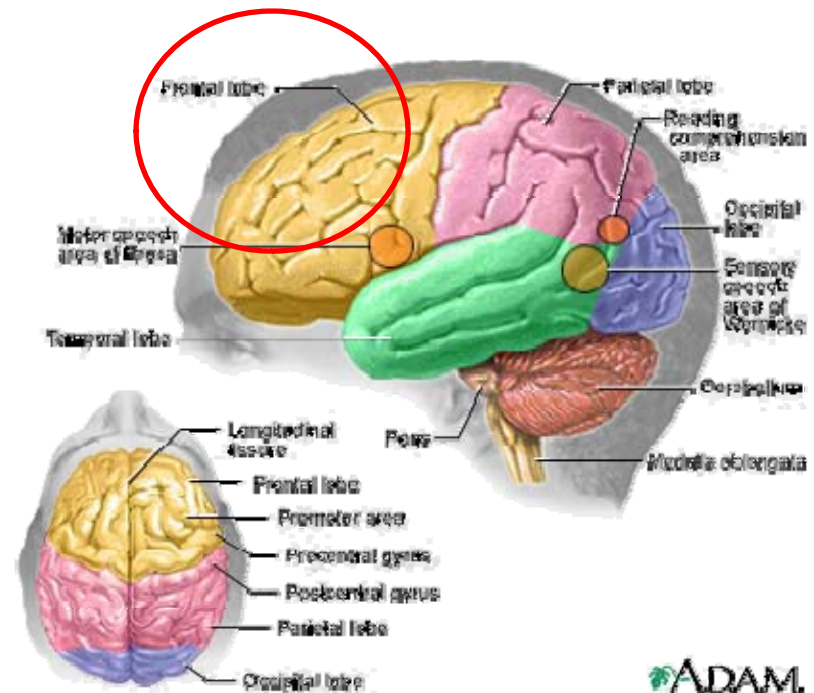
# DEVELOPING TRENDS

- AGE APPROPRIATE SETTINGS –  
BRAIN DEVELOPMENT NEEDS
- ENGAGEMENT\*
- PERSONALIZATION\*
- CONNECTIVITY\*
- AUTHENTICITY\*

*\* from George H Copa PhD, New Designs for Learning*

# BRAIN DEVELOPMENT

- 0-3 years is critical in brain development; a 3 yr old toddlers brain is **twice as active** as an adult brain
- About 95% of the brain is already formed by Age 6; the Frontal Lobe of the brain – involved in judgment, organization, planning and strategizing – Will peak at about Age 11 in girls and Age 12 in boys



[www.health.allrefer.com/pictures-images/brain.html](http://www.health.allrefer.com/pictures-images/brain.html)

- Self esteem is developed by the activation of the locus coeruleus which is strongly activated by positive “high intimacy relation moments”; hormones are released bathing the brain and heightening its attention. **Events and thoughts are likely to become fixed in memory.**

*Excerpts from Dr.Jay Giedd, Neuroscientist with the National Institute of Mental Health*



# BRAIN DEVELOPMENT IN AGES 0-11

- Prime Times of Development:

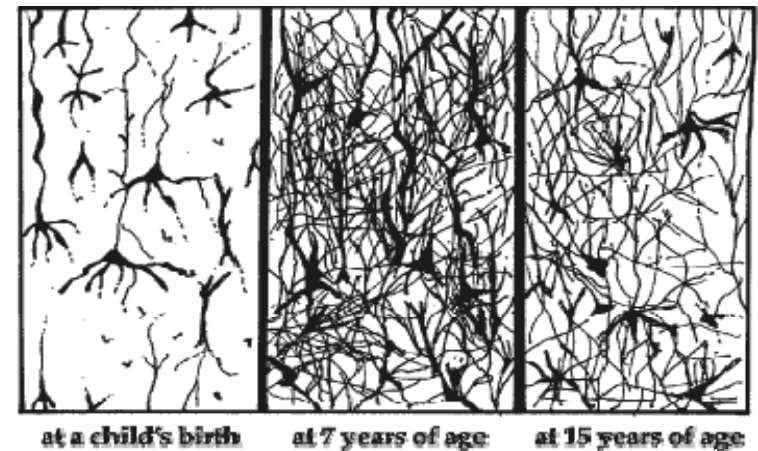
Visual and Auditory = Birth to 5 yrs

Language = Birth to 10 yrs

Physical/Motor = Birth to 12 yrs

Emotional/Social = Birth to 12 yrs

- Synapses in a child's brain are strengthened through repeated experiences, connections and pathways are formed structure the way a child learns.



[www.ag.ndsu.edu/pubs/yf/famsci/fs609w.htm](http://www.ag.ndsu.edu/pubs/yf/famsci/fs609w.htm)

*Synaptic Density Birth to 15*

- Loving care and new experiences are most important:  
talking,  
singing,  
playing and reading are key activities.

*Excerpts from Sean Brotherson, Family Science Specialist, NDSU Extension Service*

# LEARNING STYLES

“Individual differences reach their **peak in early adolescence** as these young people, each at his or her own rate, mature physically, socially, emotionally, intellectually, and morally.

“The human brain is a meaning-maker and meaning seeker. The more important the meaning, the greater the attention one must pay in order to influence the content of the meaning.”

*Asad-Uz-Zaman Asad Program Associate, D.Net (Development Research Network)*

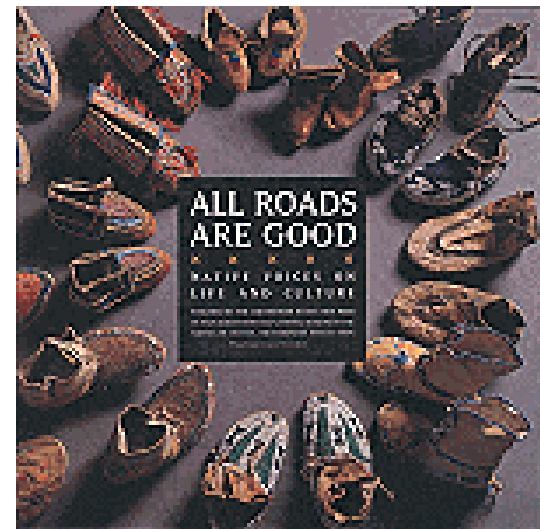
[www.learningstyles.net](http://www.learningstyles.net)

Dr. Susan Rundle, Director  
International Learning Styles Network



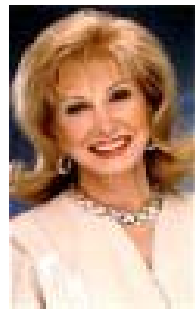
# Learning Style 101: The Basics

- Every person, child or adult, has his or her own learning style
- We learn more effectively when the method in which we are taught matches our own preferred method of learning
- Preference = Strength
- Nonjudgmental

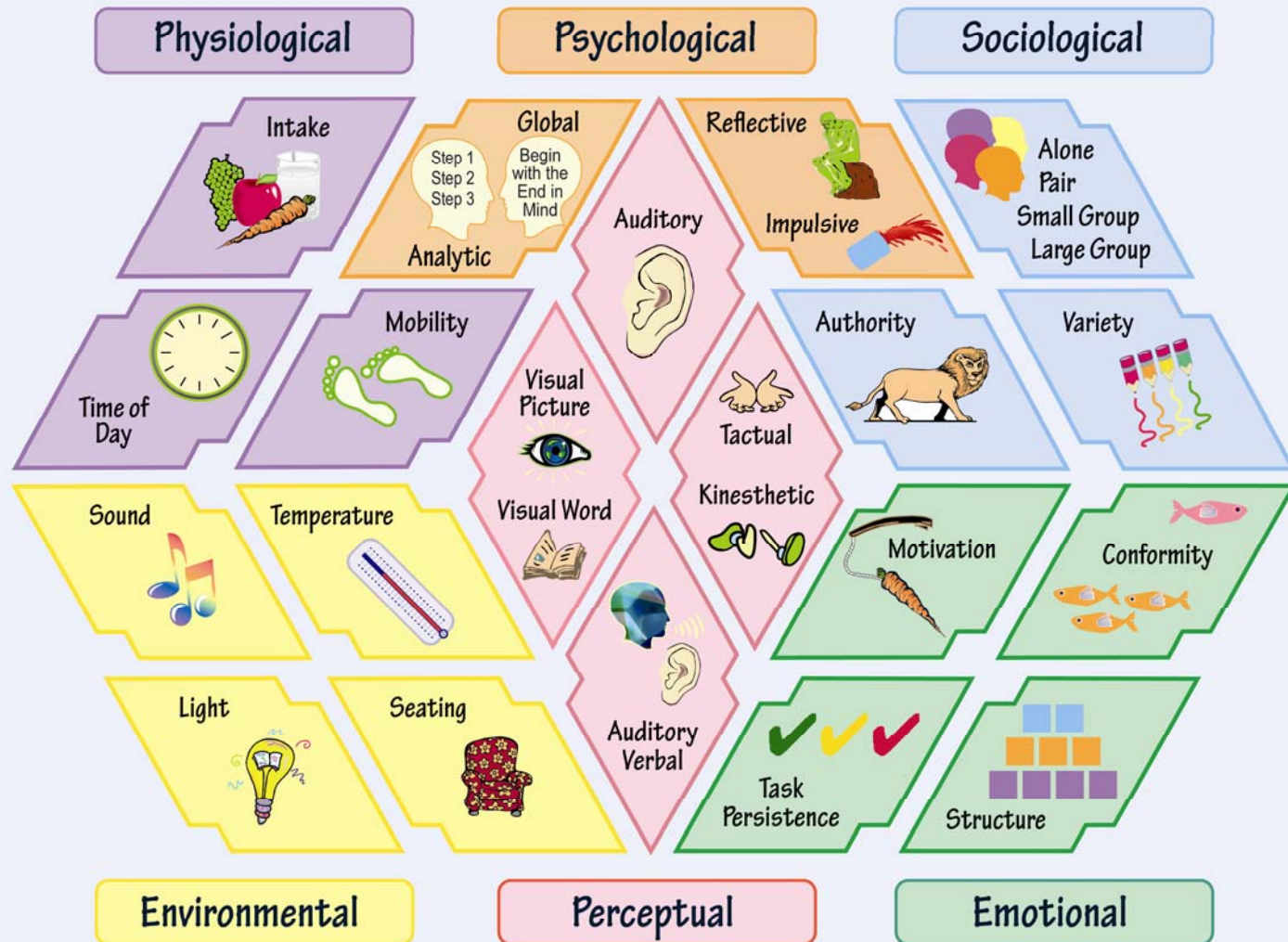


# The Dunn and Dunn Model—Then

- 30+ years of research and practice



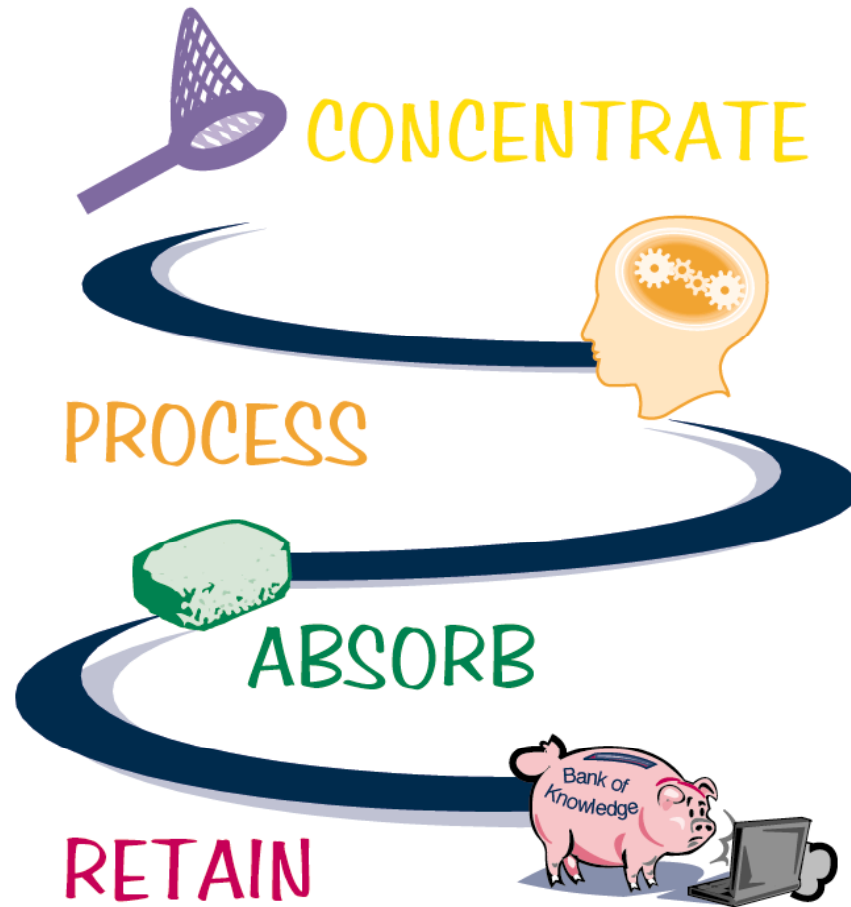
# Twenty-Eight Elements





# Dunns' Learning Style Definition

The way  
in which  
individuals  
begin to:



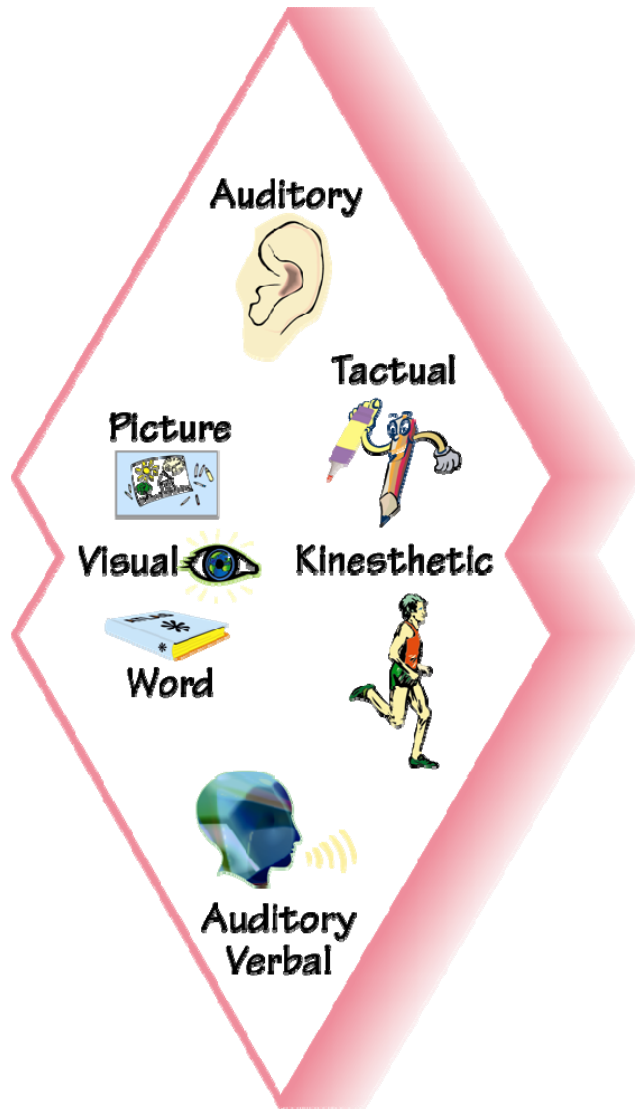
new and difficult  
information.

# Two Distinguishing Factors

- 1 The brain-behavior relationships that stimulate or hinder learning (*biologically imposed characteristics*)
- 2 and the developmental process (*previous learning experiences*).

- The importance of these factors was confirmed by:
  - Richard M. Restak
  - Armin Thies
- Both ascertained that three-fifths of learning style is biological.

# Perceptual Elements



The preferences that influence the degree to which individuals retain new information and the quality of communication.



# Perceptual Elements



## Auditory

Learns  
best by  
listening



## Visual Picture

Learns  
best by  
creating  
images in  
the mind's  
eye or  
seeing  
graphs and  
illustrations



## Visual Word

Learns  
best by  
reading  
written  
text.



## Tactual

Learns  
best  
through  
hands-on  
activities

*Small  
Motor  
Skills*



## Kinesthetic

Learns  
best  
when  
physically  
involved

*Large  
Motor  
Skills*



## Auditory Verbal

Learns  
best  
through  
discussion  
and talking  
aloud to  
self or  
others

# Psychological Elements



One's inclination for processing new information, making decisions, and solving problems.

# Psychological Elements



## Analytic

*Assimilate  
and process  
information best*  
when it is presented step-  
by-step in a  
logical sequence  
that leads to the  
overall concept.



## Global

*Assimilate  
and process  
information best*  
when individuals  
understand the overall  
concept  
before working  
through the details.

# Integrated Processors



- Utilize both Analytic/Global dimensions more frequently
- Act as an interpreter for Analytics and Globals

# Processing Styles



## Analytic

- Sequential
- Successive
- Inductive
- Specifics
- Details
- Analyze



## Global

- Simultaneous
- Holistic
- Deductive
- Generalizations
- Themes
- Synthesize

# Psychological Elements

## Reflective



Take time to weigh options when making decisions and solving problems.

## Impulsive



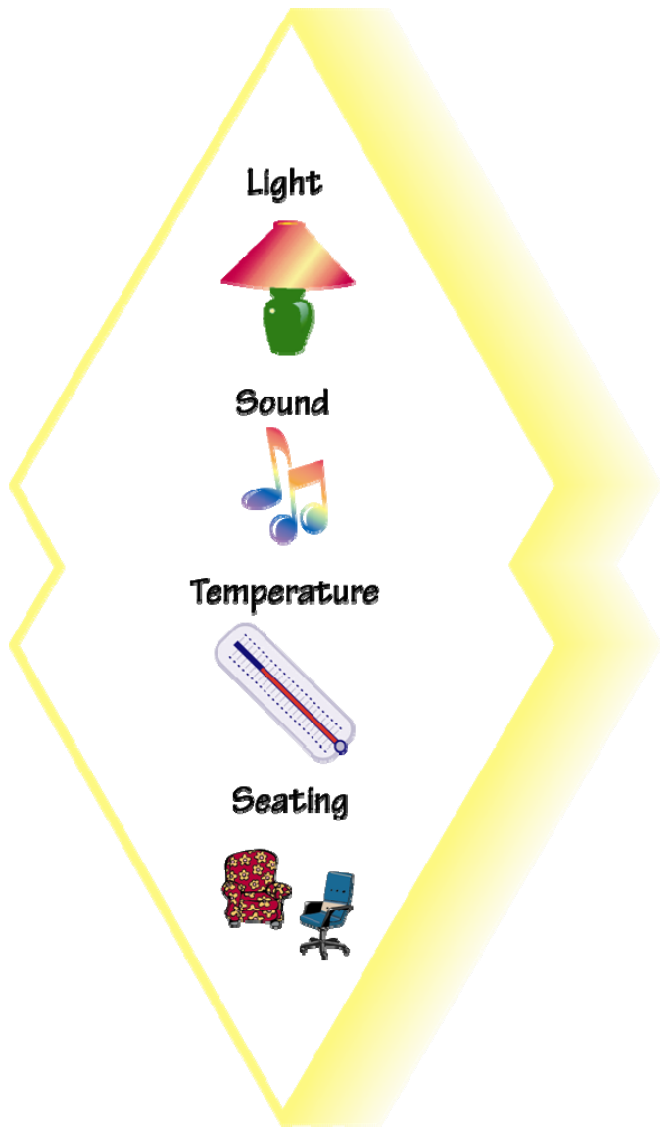
Prefer less detail when making decisions and solving problems

# Paul MacLean

MacLean,  
P.D. (1990)  
*The triune brain in  
evolution, role in  
paleocerebral  
functions*. NY:  
Plenum Press,.  
p. 575

- Because of the infinite variation in the way individuals are assembled, it must be assumed that the sentient properties of any one person, like his or her fingerprints, could never be identical with those of another.
- It is probable, therefore, that there does not exist or ever will exist one person exactly like another. If uniqueness were an indispensable requirement for an evolving society, every person would be indispensable.

# Environmental Elements



The stress-related elements in the physical environment that affect one's ability to concentrate and remain motivated over time.



# Environmental Elements

## Sound



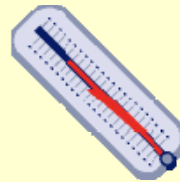
Do you concentrate best with sound in the background or in a quiet environment?

## Light



Do you study or work best when the lights are bright or softly illuminated and indirect?

## Temperature



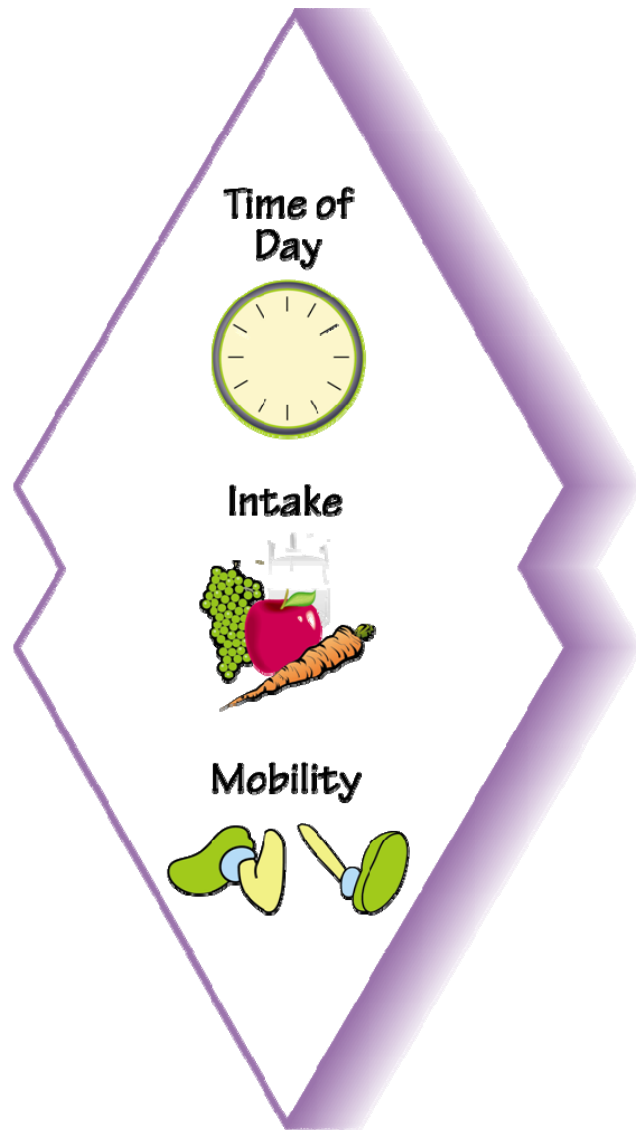
Do you concentrate and stay focused longer when you are warmer or cooler?

## Seating



Do you concentrate best when sitting at a desk or on a soft comfortable sofa?

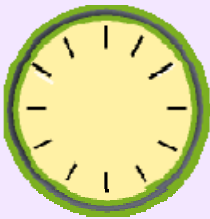
# Physiological Elements



Biologically determined preferences that influence one's ability to stay energized and focused when concentrating on complex tasks or assignments.

# Physiological Elements

## Time of Day



At what time of day  
are you most effective:

Early Morning?

Late Morning/  
Early Afternoon?

Late Afternoon?

Evening?

## Intake



Do you focus your  
attention best when  
you snack while you  
work / study or  
snack after you  
are finished?

## Mobility



Do you become  
restless and  
fidgety when you  
stay (sit) in one  
place for too  
long?

# Mobility

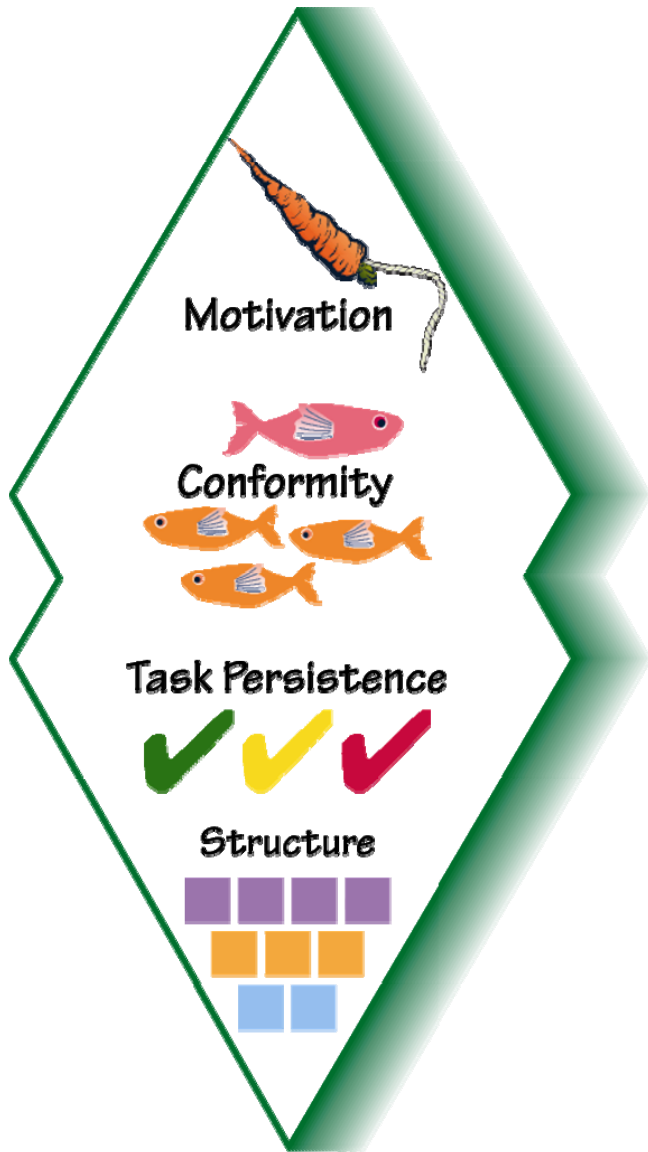


Mangino, C. (2003, 2004). Research on mobility: If you can't reach them, you may have to move them. In R. Dunn & S. A. Griggs (Eds.). *Synthesis of the Dunn and Dunn learning-style model research: Who, what, when, where, and so what?* (pp. 41-44) Jamaica, NY: St. John's University's Center for the Study of Learning and Teaching Styles.

"There are differences between learners who need Mobility and Kinesthetic learners. Kinesthetic students learn best while moving; their bodies need to be involved in the learning experience, such as through role-playing, case studies, or Floor Games

(Dunn & Dunn, 1992, 1993, 1999, p. 41)."

# Emotional Elements



Elements that influence how an individual begins and completes tasks and assignments productively.

# Emotional Elements



## Motivation

Positive feedback  
from others  
(*externally  
motivated*)?

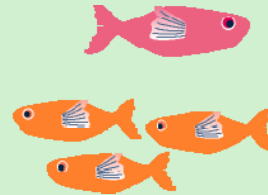
Positive feedback  
from yourself  
(*internally  
motivated*)?



## Persistence

Do you prefer  
completing one  
task before  
beginning  
another?

Do you prefer to  
work on several  
tasks at the  
same time?



## Conformity

Do you prefer to  
do things the  
way YOU think  
they should be  
done?

Do you prefer to  
do things the  
way OTHERS  
think they should  
be done?

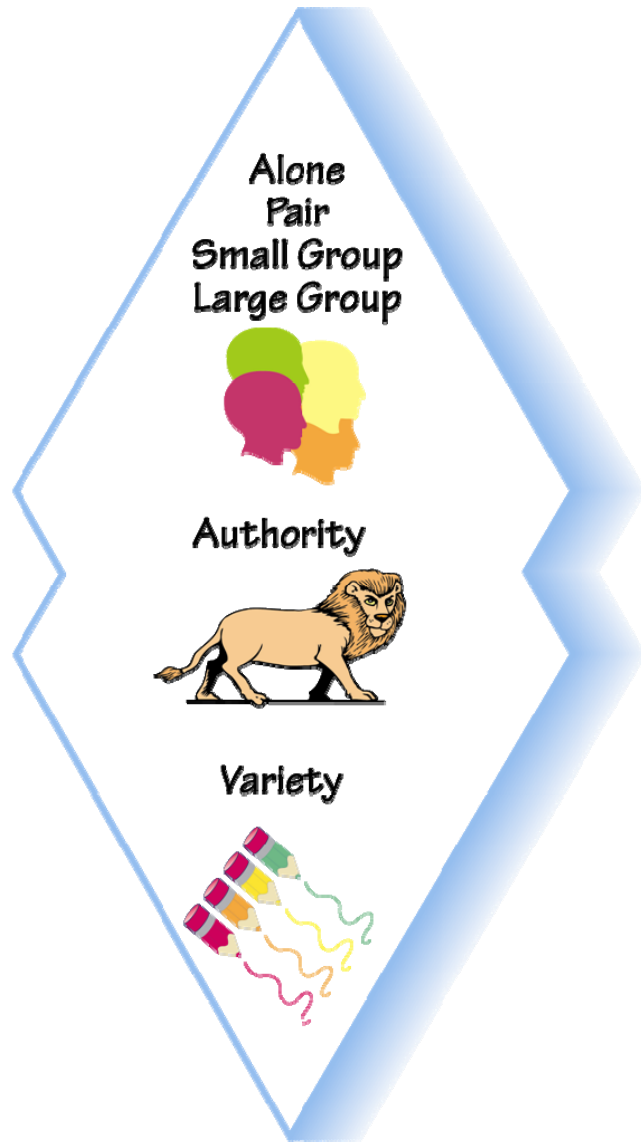


## Structure

Are you more  
productive when  
others provide  
specific  
procedures?

Do you prefer  
to create  
your own  
procedures?

# Sociological Elements



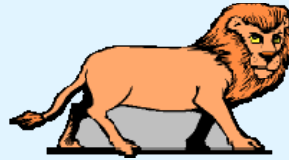
Elements of the social environment that affect efficiency, and one's preference for either routine or a variety of methods for completing tasks and assignments.

# Sociological Elements



## **Interaction**

Are you more productive when you work alone or with one other person, in a small group of 3 people, or in a large Group?



## **Authority**

Are you more productive when there is a person of authority close by while you work, or are you less productive?



## **Variety**

Do you prefer routine work using proven methods, or do you become bored when you have to do the same thing over the same way?



# Emotional/Sociological

“Applying the learning-style approach to counseling involves

- (a) assessing the learning style of each student,
- (b) identifying patterns within the counseling case load for grouping students according to their learning style preferences e.g., by their sociological or structure preferences or their perceptual strength;
- (c) interpreting students’ learning-style requirements for counseling purposes and applying complimentary counseling approaches; and/or
- (d) evaluating student outcomes as a result of using the learning-styles model (Griggs, 2003, p. 80).”

# How Learning Style Changes Over Time

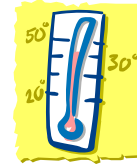
Need for sound explodes at adolescence.



Need for light increases with age.



Need for warmth increases with age.



Need for informal design increases with age.



Motivation decreases during adolescence.



Persistence varies with global/analytic predispositions.

Low responsibility (nonconformity) intensifies at age 2, during adolescence, and at mid-life.



Need for external structure declines with age.



Self-motivation becomes strong after 9<sup>th</sup> grade.



Peer-motivation emerges at about 3<sup>rd</sup> grade and is strongest during adolescence.



Adult motivation is strongest before 2<sup>nd</sup> grade.



Younger students tend to be tactual or kinesthetic. Visual and auditory modalities often strengthen after 6<sup>th</sup> grade.

Need for intake explodes during adolescence.



Time-of-day preferences change with age.



Mobility needs vary but appear to be gender-related.



Analytic-left processing inclinations increase with age. Most young children and adults are global processors.



(Based on Dunn & Griggs, 1995)

# Learning Style Model: Selected Elements

## Environmental Elements



## Sociological Elements



## Perceptual Elements

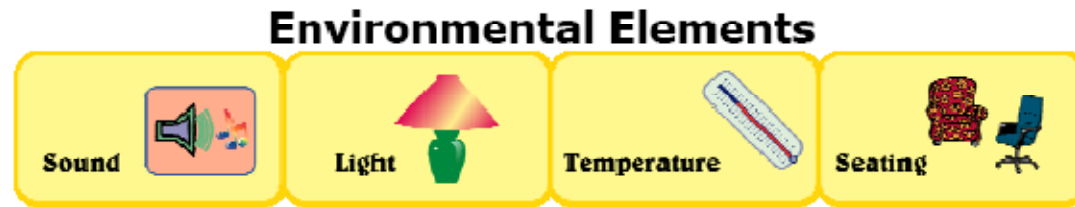


## Physiological Elements



Of the 20 elements which affect learning, the design of the learning area directly impacts these 12.

# Learning Style Model: Selected Elements



## Environmental Elements:

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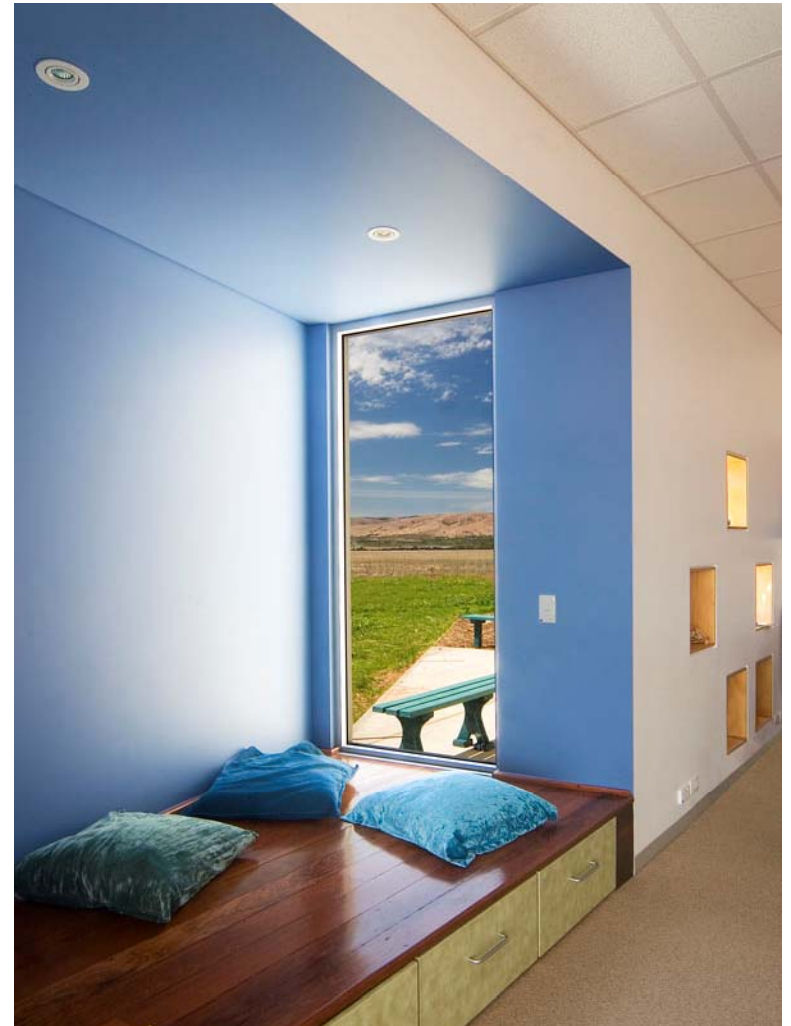
- Acoustics – Sound attenuation or enhancement as needed
- Air Conditioning / Heating – Thermal Comfort
- Lighting – Combination of natural and artificial, with the ability to dim or darken
- Furniture – Movable, flexible, allowing for individual or group settings

# Environmental Element: Light/ Sound

- bright/ full
- dark/ soft
- adjustable



# Environmental Element: Light/ Sound

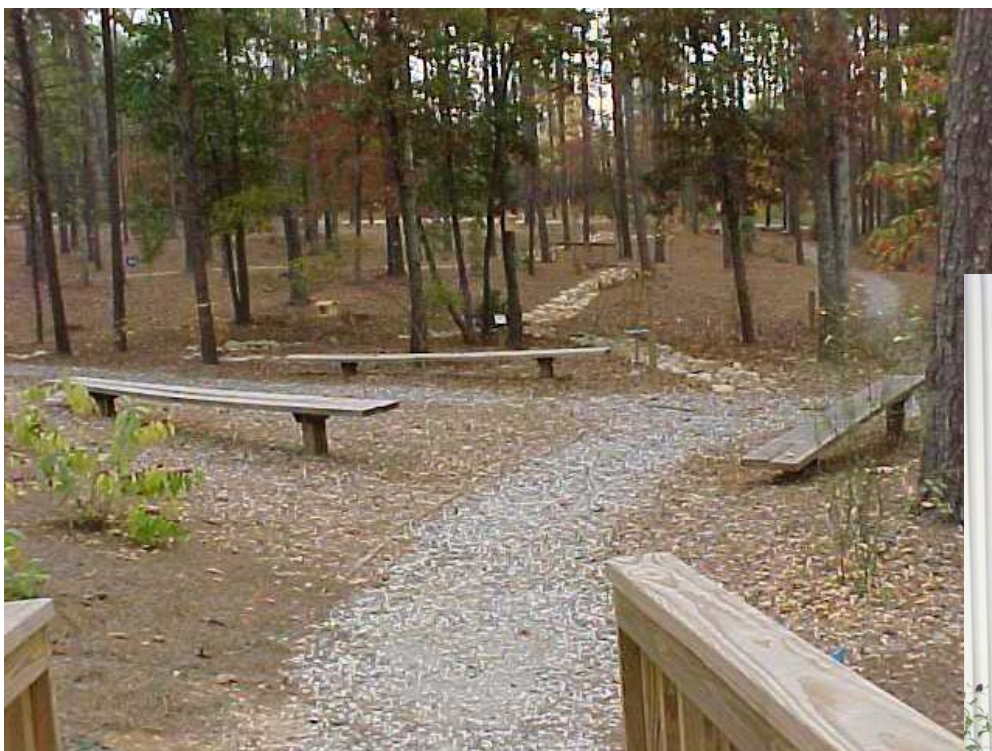




# Environmental Element: Light/ Sound

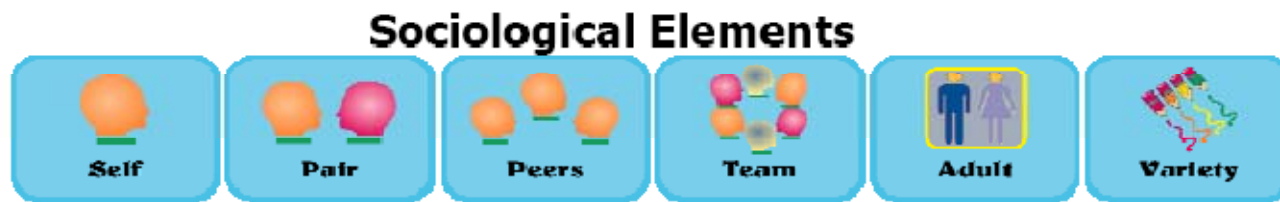


# Outdoor/ Fresh Air





# Learning Style Model: Selected Elements



## *Sociological Elements:* \_\_\_\_\_

- *Variety and different sized spaces to allow for one or more persons at a time*
- *Furniture – Movable, flexible, allowing for individual or group settings*
- *Screens or dividers to allow for privacy*

# Environmental Element/ Sociological

## Sociological Elements: Groupings

- individual
- pairs
- groups
- authoritative



## Environmental Element: Seating (Personal Comfort)

- formal
- informal
- soft/hard

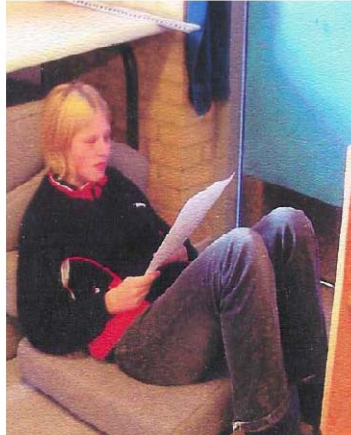


# Learning Style Model: Selected Elements

## Environmental Element: Seating



Individual/ desk



Individual/ soft



Individual/ soft/ "cave"

## Sociological Element: Groupings



Group / soft/ bright



Group /informal/ bright

# Individual/ Seating



Individual/ formal/ bright



Individual/ informal/ soft



# Individual or Group/ Seating



Individual/ informal/ "cave"



Group/ formal

# Learning Style Model: Selected Elements

## Perceptual Elements



## Physiological Elements



### Perceptual Elements:

- Ample room to move with movable furniture
- Location of markerboard/display walls
- Acoustical treatment
- Location of windows
- Variety of light settings with individual controls

# Perceptual/Physiological Elements: Multi-Sensory



## Tactile learners

- active area/ projects may be messy
- “learn by doing”
- touching and seeing





# Perceptual Elements: Addressing Mobility



## Kinesthetic learners

- active area
- higher noise/movement tolerance
- large muscle group learning/activity



Furniture that moves





# Learning Style Model: Selected Elements

## Perceptual Elements



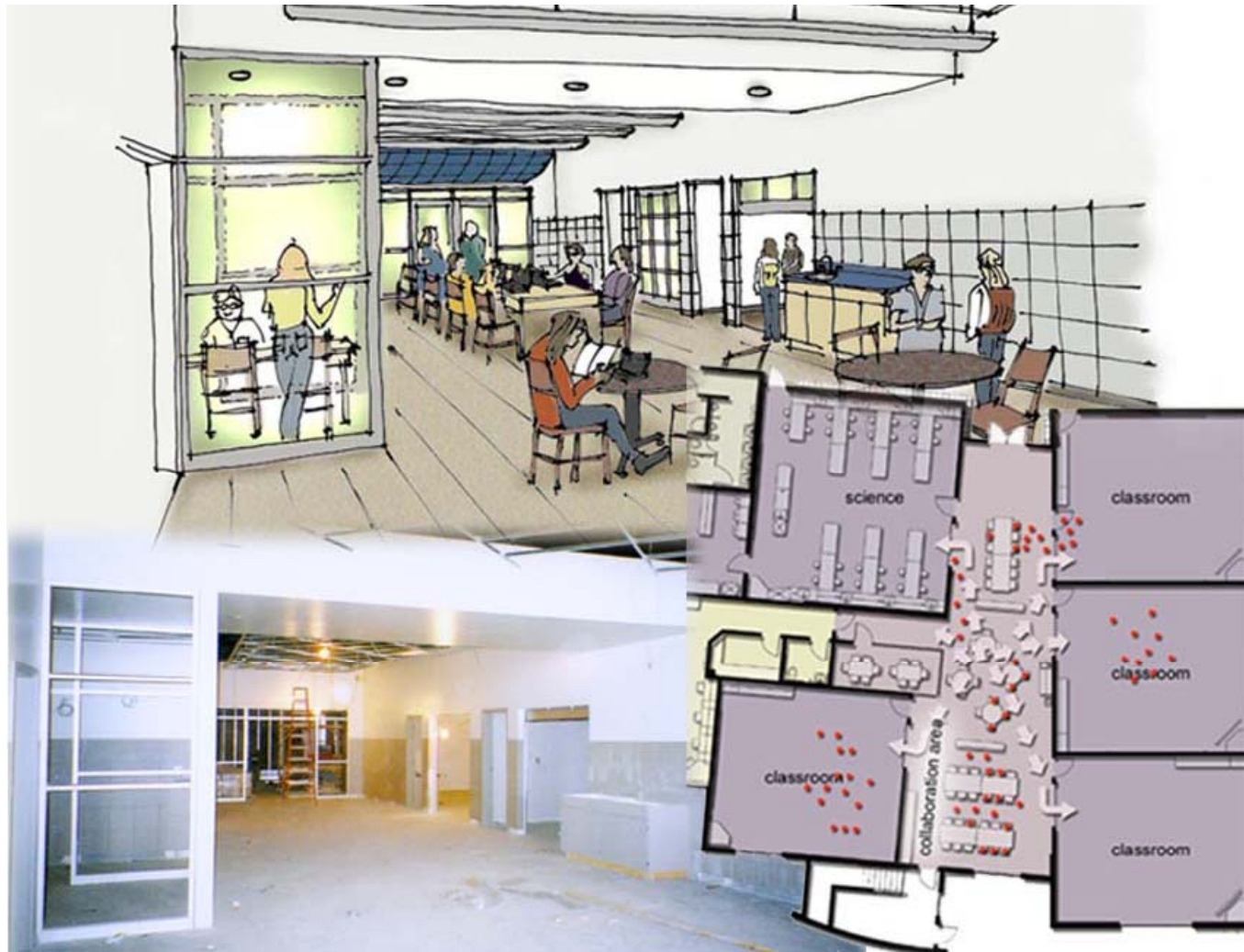
## Physiological Elements



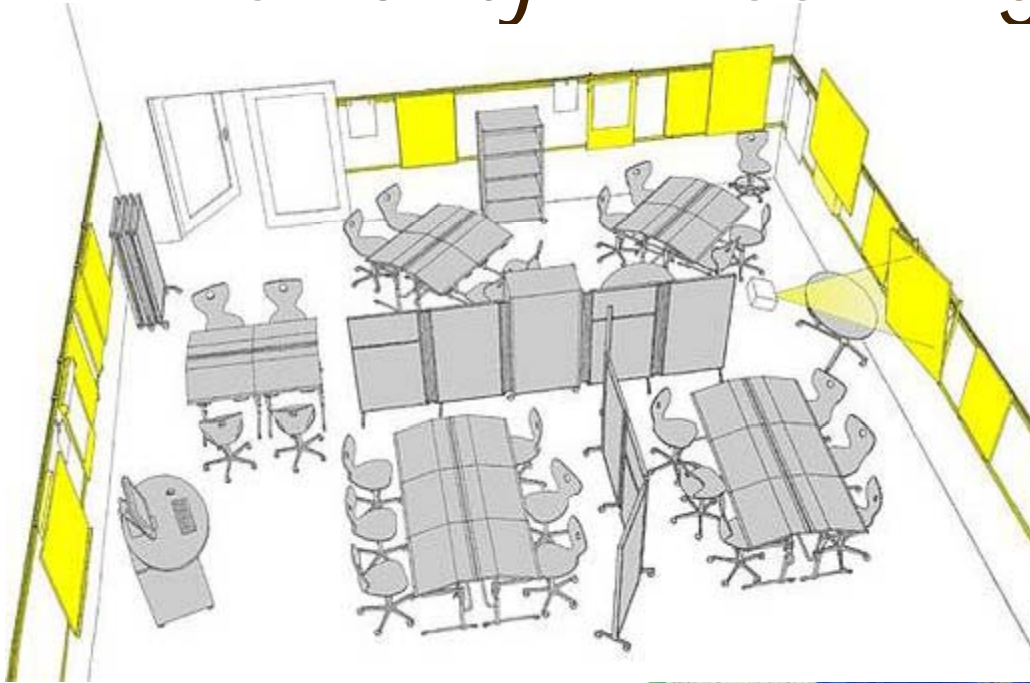
## Physiological Elements:

- Location of drinking fountains/ bubblers
- Location of cafeteria/eating areas/sinks
- Ample rooms with movable furniture

# Flexibility in Learning Environments



# Flexibility in Learning Environments





# Flexibility in Learning Environments



second floor



first floor

# Flexibility in Learning Environments



Formal/Informal Groupings



# Flexibility in Circulation Areas



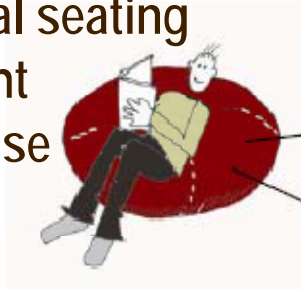
# Perceptual Elements

- Less than 12% of elementary-school children are auditory learners.
- Less than 40% of the student body is comprised of visual learners.
- Few adults remember 75% of what they have read in a 30-40 minute interval.
- The older children become, the more their auditory and visual modalities develop.

# Planning a Learning Space to Address Learning Styles

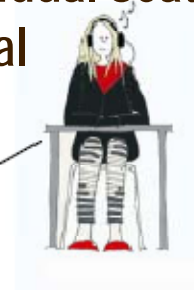
## SOCIOLOGICAL

- informal seating
- low light
- low noise



## SOCIOLOGICAL

- individual seating
- formal
- quiet



## SOCIOLOGICAL

- informal seating
- active/noisy



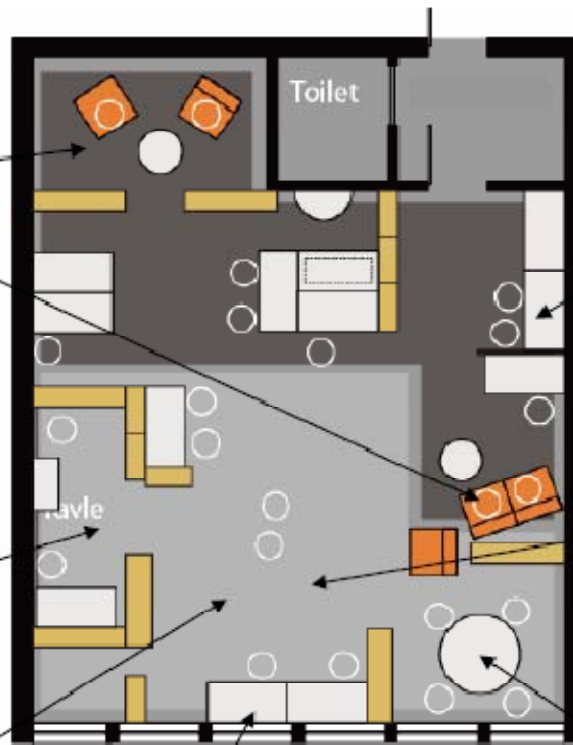
## ANALYTIC

- formal seating
- visual/ analytic
- auditory



## KINESTHETIC

- active/noisy
- large motor



## VISUAL

- bright light



## SOCIOLOGICAL

- group seating







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- AUTHENTICITY\*

*\* from George H Copa PhD, New Designs for Learning*



# ENGAGEMENT - Meaning

- Learner inspired (feel wonder, shelter), trusted, understood
- Learner as motivated
- Involved in deciding (help make rules, goals, ways, places, spaces), choice
- Active – mind, body, and spirit
- Attention to prior learning
- Connects to interests, experiences, and talents.

# ENGAGEMENT - Meaning



Credit: [www.thankingcustomers.com](http://www.thankingcustomers.com)

# ENGAGEMENT - Contradictions



*Credit: George H Copa*

# ENGAGEMENT – Supporting Environment



Student Voice

Informal Learning  
Learning through Play





# ENGAGEMENT – Supporting Environment



Meaningful learning



*Credit: cookiemag.com*



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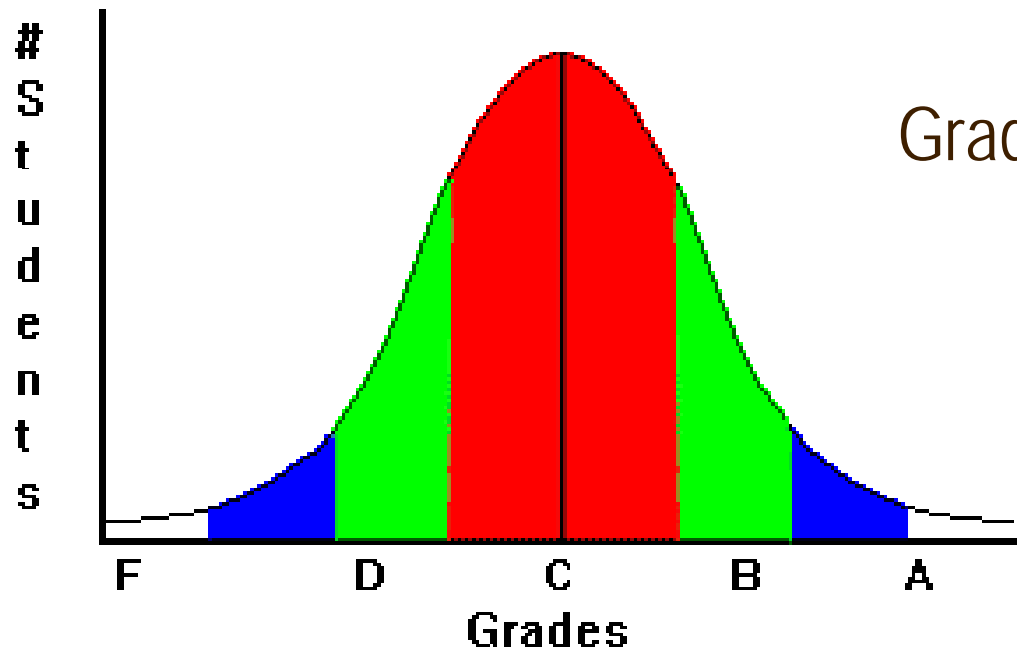


# PERSONALIZATION - Meaning

- Each and every, one at a time, all
- Learner-centered, niche for each
- Known/advocated for
- Responsive to diversity
- Wrap-around support
- Multiple ways to learn
- Self-directed, owned by learner
- Differentiated



# PERSONALIZATION - Contradictions



Grading on the Curve

# PERSONALIZATION - Meaning



Small Group and Individual Learning Spaces

# PERSONALIZATION - Meaning



Designing for Diversity



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# CONNECTIVITY - Meaning

- Relationships
- Pathways, role-ness (not role-less-ness)
- Team and community
- Systems and networks and partnerships
- Not alone, social
- Shared, interactive, intimate, equitable
- Cooperation/collaboration
- Integrated/ linked
- Informal and formal
- Local and global



# CONNECTIVITY - Contradictions



*Credit: [www.burthill.com](http://www.burthill.com)*

# CONNECTIVITY - Meaning



Student Teams



# CONNECTIVITY - Meaning



Parent Teams  
Community Support



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# AUTHENTICITY - Meaning

- Real, meaningful
- Construction, not instruction
- Production, not reproduction
- Real projects, places, problems
- Public performance
- Value-added
- Community-based
- Integrated
- Experiential



# AUTHENTICITY - Contradictions

- Predefined problems
- Answers in books
- Isolated from community
- No resources
- Move to new task and work environment every hour

# AUTHENTICITY - Meaning



Community Use of School  
Engagement of Community





# AUTHENTICITY - Meaning



Project-based Learning  
Long Term Projects



Credit: [www.zocs.org](http://www.zocs.org)

# Learning Environments Matter – What works!

Successful Learning Environments allow ...

- ...activity settings that are Integrated, Agile and Variable
- ...the formation and functioning of *small learning groups*, while providing a sense of separation, because groups working together may experience distractions and nonproductive interaction
- ...for flexibility to allow the *continual reorganization of the whole class* into various sizes and number of small learning groups. This means the space must be free as possible of permanent obstructions





*Credit: graphics by Cuningham Group*

Roswell Independent School District  
Oct 2009

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